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Patent Number: JP5182906
Publication date: 1993-07-23
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Requested Patent: ☐ JP5182906
Application Number: JP19910346646 19911227
Priority Number(s):
IPC Classification: H01L21/20; C30B23/08; C30B29/42; H01L21/203
EC Classification:
EC Classification:
Equivalents:

Abstract

PURPOSE: To obtain a GaAs epitaxial layer having a low dislocation and high quality by growing a group II element single atomic layer on an As single atomic layer, growing a low temperature GaAs buffer layer thereon and epitaxially growing a GaAs layer on the buffer layer.

CONSTITUTION: An Si (100) board 1 is heated to 250 deg.C, and an As single atomic layer 2 is formed thereon. Then, a single atomic layer 3 of group II element such as Zn, Be, Mg, etc., is formed thereon. Thereafter, while a growing temperature remains at 250 deg.C, a low temperature GaAs buffer layer 4 is grown on the layer 3. Then, the growing temperature is raised to 550 deg.C, and a GaAs epitaxial layer 5 is grown. Thus, a two-dimensional grown can be controlled in an initial step of the GaAs epitaxial growth on the board.